

STUDIO LIGHT

A MAGAZINE OF INFORMATION
FOR THE PROFESSION



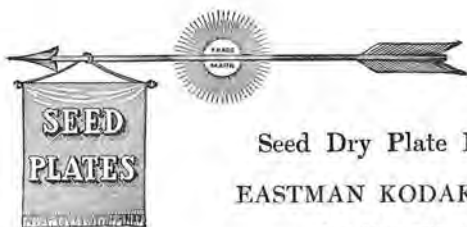
PUBLISHED BY THE
EASTMAN KODAK COMPANY
ROCHESTER NEW YORK

FEBRUARY 1919

The most modern manufacturing facilities, the purest of chemicals that can be produced, the skill of workmen with years of experience, combine to make Seed products dependable standards of excellence.

The characteristics of the Seed 30 Plate—speed plus quality, plus uniformity—are the essentials of the ideal plate for portraiture.

It's a Seed Plate you need.



All Dealers'.

Seed Dry Plate Department,
EASTMAN KODAK COMPANY,
ROCHESTER, N. Y.

Quality made, and quality
maintains the success of

ARTURA

*The paper without a
disappointment*



ARTURA DEPARTMENT,
EASTMAN KODAK CO.,
ROCHESTER, N. Y.

All Dealers'.



EASTMAN PORTRAIT FILM NEGATIVE, ARTURA PRINT

*By Chas. A. Townsend
Belfast, Maine*



STUDIO LIGHT

— INCORPORATING —

THE ARISTO EAGLE .. THE ARTURA BULLETIN

ESTABLISHED 1901

ESTABLISHED 1906

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No. 12

BUSINESS IS BUSINESS

This should be a big year and a profitable year in photography—a year of big effort, big business and better business.

Big business is only big business when it is profitable business. A great amount of business at little or no profit indicates lack of economy or an incorrect estimate of cost of production and selling. Economy is prevention of waste whether it be of time, effort, material or money. But one may practice every economy and still do business at an actual loss.

It costs a certain amount to operate a studio for a given minimum of production. We will say one employs a receptionist who is also a retoucher, and a printer and does the negative making himself. The profit will be greatest when this force can be kept working at or near its maximum of production.

We have heard it said that in

a town of a given size there is only a limited amount of business to be done and it is just a question of who gets the most of it. We don't believe this is true—in fact, we know it isn't. Three photographers in a town of 10,000 people may do a certain amount of business. Three photographers in another town of the same size may do twice the amount of business.

The unbeliever will say, "But there is a wonderful difference in the way people buy in those two towns," and we admit this fact.

This is not an advertising story, but we can't help mentioning the fact that advertising is one means of making your efforts productive. By making more people want photographs and by making those people who are your customers want photographs more often you can bring your production up to the full capacity of your plant and so make and sell a dozen pictures at the least

possible overhead cost. Good advertising will do it.

You have read a great deal about system and bookkeeping methods, etc., and when it is all boiled down it simply means knowing your business and being able to prove by your books that you do know it. There is nothing really difficult about it, but to one who has a small business and has never kept a set of books it seems difficult.

There is no denying the fact, however, that the man with the system properly operated will almost invariably make more profit on a given amount of business than the man who guesses at costs and profits.

You should have an accurate statement of your business for 1918 to be able to determine with fair accuracy what your cost for a dozen photographs will be for 1919.

If you haven't a system in operation, start one at once, and from the results obtained you can figure what it has cost you to make and sell each dozen pictures you have produced and what your profit has been. Of course, costs should be figured on a year's business to give you a correct estimate.

Keep an accurate record of every penny of your studio expense. This should include, besides the salaries of employees, a suitable salary for yourself and any member of your family who

may work in the studio. If you own your building it should include an amount for rent that you would have to pay if another were the owner. It should include advertising, cost of displays, heat, light, water, repairs, insurance, postage, office supplies, telephone and sundry expenses and any losses from bad debts. It should include a year's interest on your total investment, which you will know when you have taken an inventory, as well as depreciation, which is figured in your inventory. Charge also any losses of any nature and any donations to charity, etc.

Once you know exactly what it has cost you to produce and sell your work—manufacturing and selling cost, which, to make it still more simple, we will call "overhead", you have only to figure the cost of a year's material to be in a position to get at your net cost. From this net cost it is then a simple matter to figure what your selling price must be to make the desired amount of clear net profit.

We will suppose that your average sales for the year were \$1,000.00 per month, and all your expenses were \$600.00 per month. Of this \$600.00 you spent \$200.00 per month for material and \$400.00 per month for all other expenses. Therefore, your physical material represents 40% of your cost and your overhead 60% of your cost.



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To find the price you must charge for any order of work, find the actual cost of material. We will say you determine this is \$3.00 on a certain dozen of photographs, then

40% of cost, or physical material, = \$3.00
60% of cost, or overhead, = 4.50

100% or net cost, = \$7.50

How much profit do you wish to make on this dozen portraits which it will cost you \$7.50 to produce and sell?

Here is the way the business man will determine what his selling price must be to make a given profit on his sales.

To make a profit of 50% on the selling price you must add 100% to the cost.

For 40 % profit add 66 $\frac{2}{3}$ % to cost
" 33 $\frac{1}{3}$ % " " 50 % " "
" 25 % " " 33 $\frac{1}{3}$ % " "
" 20 % " " 25 % " "

We found our net cost was \$7.50 for a dozen portraits and we want to make 33 $\frac{1}{3}$ % profit:

\$ 7.50 = net cost
3.75 = 50% of cost

\$11.25 = sale price

Reverse the problem and you prove the rule, for 33 $\frac{1}{3}$ % of \$11.25 is \$3.75.

There is a rule for doing this same problem which works equally well. Your selling price is 100% and you wish to make a profit of 40%, so your cost must be 60%.

Divide the cost, \$7.50 by .60, the percentage of cost, and the

result is \$12.50, the selling price.

Once you have established selling prices that yield you a satisfactory profit, based on the previous year's business, you have only to increase your business without materially adding to your fixed overhead expenses to increase your profits. Increasing your business during dull months is the most likely way of adding to your profits, for you are keeping your help busy.

Just here is where the value of good advertising is seen. Advertise to get new business—keep an accurate account of your expenses—keep up your collections and avoid loss from bad accounts, and never sell your work without making a fair profit, and you should have the best business in 1919 of any year in the history of your career.

System is worth studying carefully for it is as important as the quality of the work you make. Ask your dealer for the booklet "System for the Photographic Studio."



*Every time you break
a plate—*

*Every time you receive
a broken plate—
just remember :*

Portrait Film





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REPRODUCING VALUABLE NEGATIVES

Nearly every studio has in its files negatives that can be counted upon to supply a certain amount of revenue in duplicate orders. And in some cases the value of such negatives is very hard to estimate.

You may have made the favorite portrait of your Senator and he may eventually become the Governor of your state. He may insist on the use of his favorite portrait for publicity purposes, and you will receive a considerable income from this one negative for several years.

But one day the printer gets careless and something happens—you may never know just what—but that particular negative is broken. You can copy a print, but the quality of the original is lost.

We know of a concern that handled valuable negatives as carefully as they could be handled, and still they got broken. The printer believed it was a "jinx" that their value put on them but, however that may be, the boss found that you couldn't "jinx" a film negative. So all of the valuable negatives on glass have been reproduced on film. Everyone about the place breathes more freely now, and when the printer looks as though he might be on the verge of a collapse, the boss doesn't ask him which negative he has broken but just

naturally tells him to go home and get a doctor.

If you have valuable negatives on glass it is a very simple matter to reproduce them. Make a film positive of good quality and file it away in a safe place. We say a safe place because there might be a fire in the block in which your studio is located and your negatives ruined by fire or water, but you could not get insurance to cover the value that is in them. Store your original negatives in the studio and store the positives you make from them at home. They are film and will take up no appreciable amount of space.

If your negative is of normal contrast, make the positive on Commercial Film. Do not confuse this with Commercial Ortho, which is much faster. Commercial Film has about the same speed as a Seed 23 Plate and is especially suited for making positives.

If, however, the negative is flat and could be bettered by giving it slightly more contrast, make the positive on Process Film, while if it is too contrasty, it can be improved by making the positive on Portrait or Commercial Ortho Film.

If you are not accustomed to making positives, or if you *are* accustomed to making lantern slides, it is well to know that lantern slide quality is not the positive quality necessary for pro-



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ducing negatives. The lantern slide or the transparency that is made to hang in a window must have fairly opaque shadows and transparent highlights to have brilliancy, but such quality will not reproduce a negative properly.

For this purpose the positive must have detail and gradation—not the quality that makes it beautiful to look at but the quality that makes it print well.

To secure this, exposure must be full and development must be carried to the point where detail is secured in the highlights and there is good printing density. This is absolutely necessary if the positive is to hold up and reproduce the negative in its correct balance and original quality.

Positives are usually made by contact in a printing frame, care being used to see that perfect contact is secured. Exposures are most satisfactory when made at about twelve or fifteen feet from a 16 c. p. electric lamp. For the average normal negative the exposure will be approximately from six to twelve seconds.

The regular formula recommended for the film should be used in developing both positive and negative. It will be found most simple to do any retouching, etching or spotting on the positive. When placed in a retouching frame the result of the work can be seen exactly as it will appear in a finished print.

A scratch or a hole that would be difficult to spot in the negative appears as a black spot in the positive and is quickly etched away.

If you have not used film for negative making, use film as insurance against negative breaking. Then when you have seen film advantages in this particular line of work, a trial will convince you of the superior quality of film results in all your negative making.



THE MAN WHO MADE THE PICTURES

There are photographers all over the country who make excellent work, and there are a great many of them who make exceptionally fine work. We expect to find the latter in the large cities where there are exceptional opportunities, but quite often we find them in the small towns. And, when we do, the argument that the small town photographer doesn't have the opportunity to cash in on his ability doesn't hold good.

The small town commercial photographer, for example, has the opportunity to become proficient in a number of lines of work. He can choose his field, study new methods and perfect his knowledge in any line of work, because he has the time and is not handicapped with a big overhead expense and the



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great volume of work that must come in and go out in a continuous flow to offset this overhead and leave a living profit.

Some men are most happy when they can sit in a private office and direct the forces that keep a big establishment running smoothly in its daily grind of business. These men are essential and their reputations are well earned. But the man in the small town in a smaller business, if he is so constituted, can get an equal or greater enjoyment out of life and his work by getting his own fingers in the developer.

Chas. A. Townsend of Belfast, Maine, has an establishment that at once impresses you as being in perfect keeping with the excellent quality of the work he produces. It is a home studio, for there is no need of a more expensive location in the business section of Belfast.

Mr. Townsend is not a portrait photographer, and Belfast business is but a small part of his support. His work is as well known in Camden or Rockland or Bar Harbor, and his commissions often come from wealthy members of the summer shore colonies whose homes and grounds offer wonderful opportunities to the photographer who knows how to make the most of them. And that Mr. Townsend does is readily seen by the examples of his work which we are permitted to reproduce.

Mr. Townsend finds that with Commercial Ortho and Portrait Film he is equipped with the material that meets every need of the commercial photographer for work outside the studio.

For landscapes with delicate cloud effects, and foliage that should be rendered in tone values simulating those of nature, he finds Commercial Ortho Film not only gives him the color values he desires, but a full scale of gradation.

For interiors where excessive contrasts are encountered, and the effect of harsh lights must be modified to allow of a correct rendering of the shadows, Portrait Film gives him results that in every way excel those he had formerly obtained on plates.

His film material is always non-halation and has the added value of lightness and convenience in handling, which appeals to the commercial photographer whose work is for the most part away from the studio. The Townsend Studio in Belfast is a model workshop, and its proprietor is a workman who puts quality ahead of all else.

We regret that the standard weight and quality of STUDIO LIGHT paper, which was ordered when restrictions on paper making were removed by the War Industries Board, is not available for reproducing the work of Mr. Townsend.



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THE CHEMISTRY OF DEVELOPMENT

When a light sensitive material is exposed for a short time to light, although the change which takes place may be so minute that it cannot be detected by any ordinary means, if the exposed material is placed in a chemical solution, which is termed the "developer," the chlorine or bromine is taken away from the silver, and the black metallic silver which remains behind forms the image. This image is, of course, made up of grains, because the original emulsion contains the silver bromide in the form of microscopic crystals, and when the bromine is taken away from each of these, the crystal breaks up and a tiny coke-like mass of metallic silver remains behind in exactly the same position as the bromide crystal from which it was formed, so that, whereas the original emulsion consisted of microscopic crystalline grains of the sensitive silver salt, the final image consists of equally microscopic grains of black metallic silver. This removal of the bromine from the metallic silver is known chemically as *reduction*. (It must be remembered that chemical reduction has nothing to do with the photographic operation known as the reducing of a negative, that is, the weakening of an over-dense negative, where the word simply refers to

the removal of the silver and is not used in the chemical sense.)

Chemical reducers are substances which have an affinity for oxygen and which can liberate the metals from their salts, in much the same way as charcoal is used to reduce iron from its ore. A developing solution is therefore one which contains a chemical reducer. All substances which are easily oxidized, are, however, not developers, since in order that a reducer may be used as the photographic developer it is necessary that it should be able to reduce exposed silver bromide but should not affect unexposed silver bromide, so that its affinity for oxygen must be within certain narrow bounds. It must be a sufficiently strong reducer to reduce the exposed silver salt, and at the same time must not affect that which has not been exposed. For practical purposes the developing agents are limited to a very few substances, almost all of which are chemically derived from benzol, the light oil which is distilled from coal tar.

The commonest developing agents are pyrogallol, hydroquinone, paramidophenol or Kodelon, Elon and diamidophenol.

Pyrogallol (or pyrogalllic acid) is made from gallic acid, which is obtained from gall nuts imported from China, the gall nuts being fermented to obtain the gallic acid, and the gallic acid being then heated in a still from which the pyrogallol is distilled over. Before the war

most of the pyrogallol used in this country was made in Europe, but the shortage was met by the erection of a plant by the Eastman Kodak Company, which to-day makes all the pyrogallol needed for their customers. Pyrogallol is made in two forms: a flaky powder form and a crystal form. When the powdered pyrogallol is opened in the dark-room or studio, the fine particles fly about and are likely to settle on paper or plates, producing spots on the photographs. For this reason the Eastman Kodak Company supply pyrogallol in the crystal form, which can be handled without any danger of particles flying about and giving trouble.

Hydroquinone is made from benzol, which is first converted into aniline and then oxidized in order to get the hydroquinone. It is made in several places in the United States. It is a less powerful reducing agent than pyrogallol but gives no stain and is very useful in conjunction with Elon or Kodol for developing papers. When used with these substances it also gives developers which keep very well in tanks and are convenient where a developer must be kept for a long time, as in motion picture work.

Some time after pyrogallol and hydroquinone were in general use by photographers, there were introduced a number of new developing agents made from coal tar, which are very useful as supplements to the older developers. Several of these are based on a substance called *paramidophenol*, which is made in the manufacture of dyes. When paramidophenol is treated with methyl alcohol the methyl attaches itself to it and forms a compound called *methyl-paramidophenol*, which is

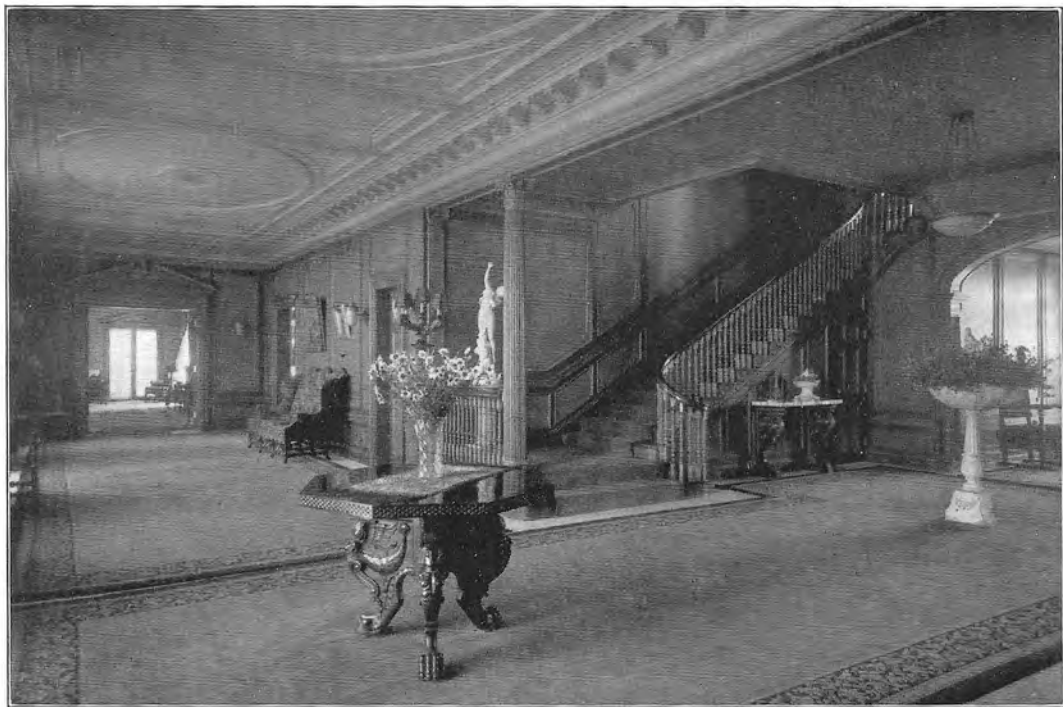
a more active developing agent than the paramidophenol itself. Another developing agent of the same type is *diamidophenol*, which is prepared in a way similar to paramidophenol.

Paramidophenol, methyl-paramidophenol and diamidophenol are all bases and the developing agents are their salts, the chlorides (or hydrochlorides) of paramidophenol and diamidophenol being used, and the sulphate of methyl-paramidophenol.

Paramidophenol Hydrochloride is manufactured by the Eastman Kodak Company under the name of *Kodolon*. Many of the so-called "new" developing agents on the market consist entirely or mainly of paramidophenol hydrochloride. A good sample should be light in color and should burn entirely when heated to redness, leaving no ash behind.

Monomethyl Paramidophenol Sulphate is sold by the Eastman Kodak Company under the name of *Elon*. It is a more powerful developer than paramidophenol and is used with hydroquinone as one of the standard developing agents, Elon-hydroquinone being used almost exclusively for the development of papers and very largely for the development of other sensitive materials. Elon is distinguished sharply from paramidophenol hydrochloride by the fact that it is soluble in the cold in its own weight of strong hydrochloric acid, whereas the paramidophenol hydrochloride is insoluble.

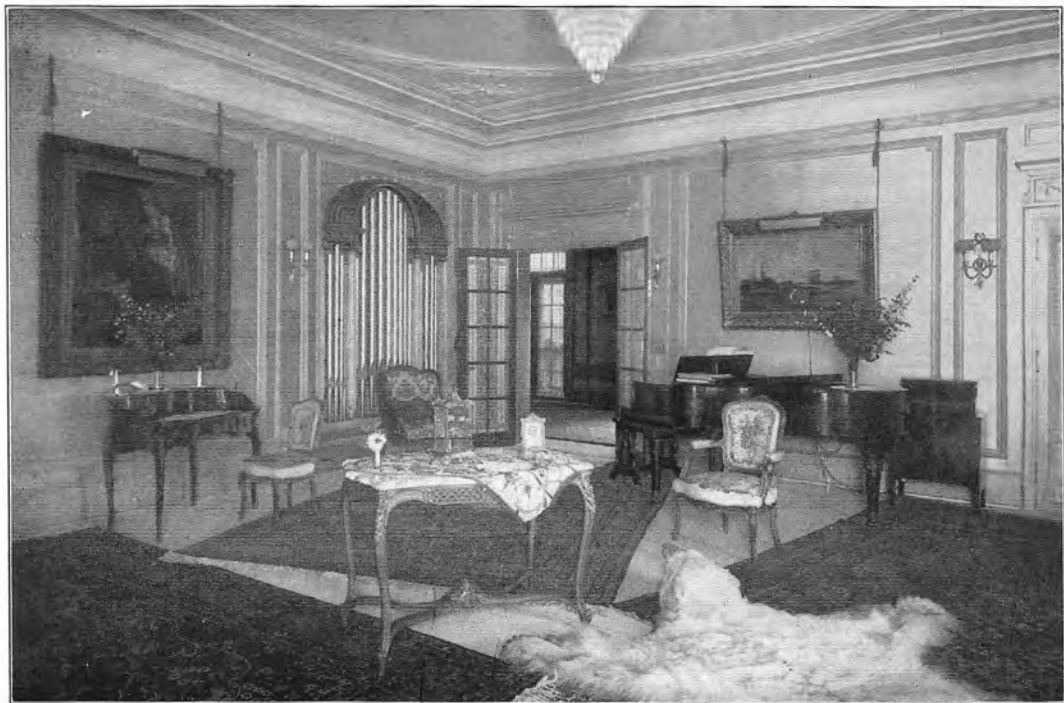
Diamidophenol Hydrochloride is sold by the Eastman Kodak Co. under the trade name of *Acrol*. It is a steel gray powder darkening easily in the air, and is oxidized so rapidly in solution that it is usual to dissolve it only when required for use.



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Different reducing agents behave differently in development. We cannot use Elon in the place of hydroquinone and get the same effect. An image developed with Elon comes up very quickly all over the plate and gains density slowly, while the hydroquinone image comes up very slowly but gains density steadily and rapidly. A very little change in the temperature affects hydroquinone a good deal and affects Elon very little, and in the same way a small amount of sodium or potassium bromide affects hydroquinone and does not effect Elon nearly so much. These differences in the developing agents depend upon the chemical nature of the substances themselves, and the particular property to which these differences are due is called the "reduction potential" of the developer.

The reduction potential does not by itself determine the speed with which the developer develops the image, because this depends chiefly upon the rate at which the developer diffuses into the film, and on the amount of developing agent and other substances in the developer. A high reduction potential enables a developer to continue to develop more nearly at a normal rate under adverse circumstances, such as low temperature or the presence of bromide. The reduction potential of a developer, in fact, may be compared to the horse

power of an automobile which for other reasons than the power of its engine is limited in speed. If we have two automobiles and they are confined to a maximum speed of twenty miles an hour, then on level roads the one with the more powerful engine will be no faster than that with a weaker engine, but in a high wind or on a more hilly road the more powerful engine will allow the automobile to keep its speed, while the machine with the weaker engine will be forced to go more slowly. We could, indeed, measure the horse power of an automobile by the maximum grade which it could climb at a uniform speed of 20 miles an hour.

In development, the analogy to the hill is the addition of bromide to the developer, since the addition of bromide greatly delays development, and it is found that the higher the reduction potential of a developer the more bromide is required to produce a given effect. If we measure the developing agents in this way, we shall find that hydroquinone has the lowest reduction potential, then pyro, then Kodelon, and finally Elon has the highest. Hydroquinone has so low a potential that it is rarely used alone but is generally used with Elon. Kodelon can be substituted for Elon but more Kodelon has to be used in order to produce a developer of the



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same strength. Developers with a high reduction potential such as Elon, and to a less extent Kodelon, make the image flash up all over at once because they start development very quickly even in the lesser exposed portions of the emulsion, while developers of low reduction potential, like pyro and especially hydroquinone, bring up the high-lights of the image first and the shadows do not fully appear until the high-lights are somewhat developed.

Developing agents cannot develop at all when used by themselves. With the single exception of Acrol, developing agents in order to do their work must be in an alkaline solution, and the energy depends upon the amount of alkali present. The developers of higher reduction potential, which bring up the image very quickly, require less alkali than those of lower reduction potential. For instance, hydroquinone is often used with caustic alkalis, while the other developing agents require only the weaker carbonated alkali.

The amount of alkali governs the energy of a developer, and if too much alkali is present, the developer will tend to produce chemical fog, while if too little alkali is present, it will be slow in its action. Alkalis also soften the gelatine of the emulsion, and consequently too alkaline a developer will produce over-swelling and will give trouble

with frilling or blisters in warm weather. This action of the alkali on the gelatine has nothing to do with its developing properties but is merely an unfortunate fact.

The alkalis used in development are of two kinds: the caustic alkalis and the carbonated alkalis.

Caustic alkalis are produced when the metal itself reacts with water, the metals from which the alkalis generally used are derived being potassium and sodium. These metals are so easily oxidized that they have to be preserved from all contact with air or water by immersion in light oil or gasoline.

If we take a small piece of sodium and place it on the surface of water in a dish, it will react with the water with great violence, melting with the heat produced and buzzing about the surface, while if we restrict its movement, the development of heat will be so great that the hydrogen produced will burst into flame. In the case of potassium, the reaction is even more violent than with sodium and is always accompanied by flame. The reaction may be represented by the equation

$$\text{Na} + \text{H}_2\text{O} = \text{NaOH} + \text{H}$$

Sodium Water Caustic Soda Hydrogen

the sodium combining with the water to form caustic soda and liberating hydrogen, which comes off as gas, and, as has already been stated, catches fire and burns in the air. This is, of course, not the method by which the



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alkalis are actually produced. As a matter of fact, the metals are produced by electroplating the metal out from the melted alkali.

Caustic Soda is made either by the passage of an electric current through a solution of common salt, when the soda separates at one electrode and chlorine gas is liberated at the other, or from sodium carbonate, which is causticized by means of lime. Lime is calcium oxide and is prepared by heating limestone, which is calcium carbonate, the carbon dioxide being driven off from the limestone by the heat. When the lime is added to sodium carbonate, the lime removes the carbon dioxide from the carbonate, and leaves the sodium hydrate in the solution, which is then evaporated to get the solid substance. At present, caustic soda is easily obtained in a very pure state, and there is usually no difficulty in getting good caustic soda for photographic work. It must be protected from the air, since it easily absorbs moisture and carbon dioxide. As its name indicates, it is very caustic and attacks the skin, clothing, etc.

Caustic Potash is very similar to caustic soda and is prepared in the same way. Fifty-six parts of caustic potash are chemically equivalent to forty parts of caustic soda.

(To be continued.)



NOT HALATION

Turn around in your chair so that you face the window squarely; then turn your head so that you are looking at the wall space directly alongside the window but with the light from the window still striking your eyes. If the light is at all bright you will find that the window frame and the

wall beside it seem covered with a haze. You are unable to see sharp detail in that space no matter how long you try.

Now hold this magazine directly in front of your eyes so that it will completely shut out the light of the window but allow you to see the wall alongside. Move it back and forth and you will see that as it comes between your eyes and the bright light, you can immediately see a wealth of detail that was not visible before.

The hazy effect you have just seen is not halation. It is reflected light that has been so scattered over the image your eyes have tried to form that it fogs your vision. If you will close one eye and go through the above experiment again, you will see that wall space as the lens of your camera sees it, and you will find it is much easier to cut out the reflected light than it was with both eyes open.

You get this effect most often in making the so-called Rembrandt lightings in the studio and you often encounter it in home portraiture. The material you use has nothing to do with it as it is not halation—you get it with film as well as with plates—but you may also get halation with it if you use plates.

A lens shade will cut this light out of your lens just as the magazine cut it out of your eyes. If you do not have a lens shade, a dark head screen will answer.

Of course—
a photograph

*Make an appoint-
ment to-day.*



THE PYRO STUDIO

Line cut No. 260. Price, 30 cents.

THE ONLY CONDITION
We make but one condition in our offer of cuts for the use of photographers.

It is obvious that two photographers in the same town would not care to use the same cut, and we are therefore obliged to limit this offer to one photographer in a town. It will be a case of first come first

served. The first order from a city will be promptly filled. Succeeding orders (if any) will necessarily be turned down and the remittance, of course, will be returned. It is also obvious that we cannot, on account of the cost of the drawings, furnish any large variety of cuts at the nominal prices quoted, and therefore can offer no substitute cut. Get your order in *first*. E. K. CO.

It saves time—insures
absolute accuracy



The Eastman Studio Scale

Specially designed for the convenience of the professional photographer.

There are no small, loose weights—just a sliding weight on a beam and the larger weights for ounces and fractions of ounces, avoirdupois. All bearings are of hardened steel; the beam is black with white markings; all other parts are nickeled.

THE PRICE

Eastman Studio Scale \$4.50

EASTMAN KODAK COMPANY,

ROCHESTER, N. Y.

All Dealers'.

*We Buy Old Negatives—
either Portrait Film or Plates*

We purchase lots of 100 pounds or more of Portrait or Commercial Film negatives, if in good condition and shipped in accordance with instructions. Before making any shipments, however, please secure packing instructions, prices and further particulars.

We purchase glass negatives of standard sizes from $4\frac{1}{4} \times 6\frac{1}{2}$ to 14×17 , provided same are in good condition and packed as per our instructions.

We will pay all the freight on shipments of 100 lbs. or more, except from localities where the freight rate exceeds \$1.00 per 100 lbs., in which case the shipper will be required to pay the excess.

For full instructions, shipping labels, prices, etc., address:

EASTMAN KODAK CO.

Department S.

ROCHESTER, N. Y.

Look ahead a few months

And when you see the possibilities of outside business, look into the possibilities of a new camera making a picture of new proportions, especially suited to the greater number of commercial subjects.



Eastman View Camera No. 2

7 x 11

For either vertical or horizontal subjects, the proportions of the 7 x 11 picture are better than those of the 8 x 10. Especially suitable for groups, architectural subjects and landscapes. The pictures look larger and sell better, yet the material costs no more.

The 7x11 Eastman View Camera No. 2 is an improved model of the Empire State and Century View and embodies every practical convenience. A sliding front board permits the lens to be centered on either half of the film or plate when making two exposures on a 7 x 11.

Eastman View Camera No. 2, 7 x 11, with case
and one Portrait Film or Plate Holder . \$50.00

EASTMAN KODAK COMPANY

All Dealers'.

ROCHESTER, N. Y.

Big Profits in Big Prints

Equip your work rooms with an efficient enlarging outfit



The Eastman Enlarging Outfit

Is a practical and convenient equipment for enlarging from
5 x 7 and smaller negatives.

Eastman Enlarging Outfit, complete, without lens . . . \$125.00

Or, make an enlarging outfit of your view camera



The R. O. C. Enlarging Back

Replaces the ground glass back of the Century or Eastman View Camera, at once adapting it for enlarging. A Reflecting Cone facilitates the use of artificial light.

R. O. C. Enlarging Back, 6½ x 8½
or 8 x 10 \$15.00
Reflecting Cone for R. O. C. En-
larging Back, 6½ x 8½ or 8 x 10 . . . 5.00

EASTMAN KODAK COMPANY,

All Dealers'.

ROCHESTER, N. Y.

We manufacture many of our own chemicals to insure the quality and uniformity of our sensitive products—we sell these same tested chemicals to insure the quality and uniformity of your results.



Specify E. K. Co. Tested

EASTMAN KODAK COMPANY,

ROCHESTER, N. Y.

All Dealers'.

*There's no better developer
at any price.*

TOZOL

*The Complete Developer for
Photographic Papers*

Every grain of it produces developing energy. Contains no soda, starch or other adulterants. Tozol is prepared exactly as it was before the war. We make it—we know it's right—we recommend it for Artura, Azo, Velox and other developing papers.

THE PRICE

1 oz. bottle	\$.85
$\frac{1}{2}$ lb. bottle	3.15
$\frac{1}{4}$ lb. bottle	6.15
1 lb. bottle	12.00

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All Dealers'.

When war is but a recollection—



EASTMAN PORTRAIT ALBUMS

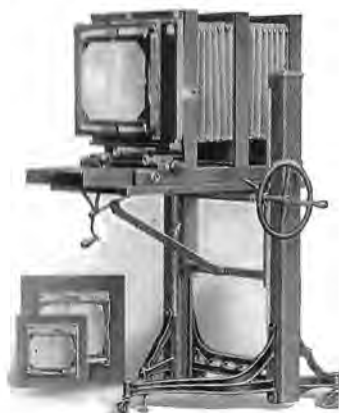
Will keep the soldiers' portraits as they should be kept, a picture record their children will be glad to own.

Have albums in stock, show them, sell them and you will make more business for yourself. And besides, there is a good profit for you on album sales.

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Century Studio Apparatus

Ease and smoothness in making adjustments.

Rapidity and precision in the operation of the sliding carriage, and the backs of various sizes.

Interchangeable use of Eastman Portrait Film and Plates in regular View Holders.

Excellence of construction and richness of finish throughout.

Write your stock house for particulars.

CENTURY CAMERA DEPARTMENT

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One of the best for large work.



THE ARMADA

For $6\frac{1}{2} \times 8\frac{1}{2}$ and 8×10 square and oval prints.

Colors, Swiss Grey (a neutral shade for all tones) and Milan Brown.

Rag stocks—hand-colored deckled edges. The texture and finish of the stock is unusual—a new idea in the art of Paper Making.

'Tis a style you want for your high priced Insip work.

Priced \$17.50 to \$18.50 per 100.

Sample for nine 2c. stamps. Mention color preferred.

Sample Offer No. 1024.

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Make your enlargements look like
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ARTURA CARBON BLACK

Enlargements retain the contact
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Use

Eastman Portrait Film

Film produces negatives of better quality, free from halation.

Film negatives are easiest to retouch, light in weight and unbreakable.

You can store a thousand film negatives in the space required for a hundred glass plates.

These are a few of the good reasons why you should

Use

Eastman Portrait Film

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